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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,871	02/11/2002	Lawson A. Wood	AW-19	2629
7590 01/14/2004				
Lawson A. Wood 873 N. Frederick Street Arlington, VA 22205		EXAMINER WU, XIAO MIN		
		ART UNIT PAPER NUMBER		
		2674		
DATE MAILED: 01/14/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/068,871

Applicant(s)

WOOD, LAWSON A.

Examiner

XIAO M. WU

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2-4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Tew et al. (US Patent No. 6,232,963).

As to claims 1, 4, 8, Tew discloses a method for displaying an image described by video words of a frame, the video words having bits with different bit ranks (e.g. bit-plane), the method comprising the steps of: (a) for each bit rank, turning pixels of a spatial light modulator on or off in accordance with values of the video words for the respective bit rank (col. 4, lines 35-37); (b) continuously exposing the spatial light modulator to light for a light source during substantially the entire time that step (a) is conducted (col. 5, lines 14-20); and (c) driving the light source at energy levels that depend on the bit rank (e.g. the MSB is displayed with the greatest illumination amplitude, and the LSB with the lowest amplitude, see col. 5, lines 45-62). Tew further discloses substantially exposing the spatial light modulator to light that varies substantially in intensity as required in claim 4 (see col. 5, lines 29-43). Tew also discloses discontinuously exposing the digital micro-mirror device to brief-duration flashes of light, the flash having intensities that depend on the respective bit rank as required in claim 8. For example, each bit-plane is displayed by turning all pixels either on or off as determined by their

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bit values, if a pixel value were 1010, it would be on from 0 to t1, then off until t2, then on until t3, then off until the beginning of the next frame. The total brightness for that pixel during the frame would be $8+2=10$ (see col. 5, line 63 to col. 6, line 4).

As to claims 2, 6, 9, Tew discloses that the spatial modulator is any LCD panel (col. 1, lines 40-41).

As to claims 3, 7, 10, Tew discloses that the spatial light modulator is a digital micromirror device (col. 1, line 19).

As to claim 5, Tew discloses that the light has an intensity at one moment that is at least about twice intensity at another moment (e.g. as shown in Fig. 1, the intensity of the illumination in period t1-t2 is about twice in the period of t2-t3).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The US Patents 5,128,782, 6,348,907, 6,535,187, and Pub. No. US 2002/0093477 are cited to teach a SLM display device.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiao Wu whose telephone number is (703) 305-4721.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (703) 305-4709.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9306

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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington.
VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the Technology Center 2600 Customer Service Office whose telephone
number is (703) 306-0377

xw

January 11, 2004


XIAO WU
PRIMARY EXAMINER
ART UNIT 2674